ORDER NO. GAD 84112213C2

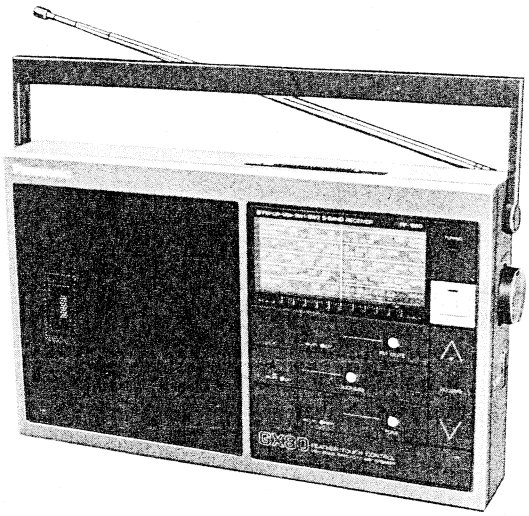
Service Manual

Radio

RF-1680L

(Black)

FM-AM 5-Band Portable Radio



This is the Service Manual for the following areas.

[Z]...For all European areas except United Kingdom, West Germany, France, Italy and Finland.

[E]...For United Kingdom.

[F]...For France.

[I]...For Italy and Finland.

[G]...For West Germany.

■ SPECIFICATIONS

General:

Power Requirement:	AC: [Z][F][I][G]...220 V, 50 Hz [E]...240 V, 50 Hz Battery; 6 V (Six "C" Size Flashlight Batteries) (Panasonic UM-2 or equivalent)
Power Consumption:	3.5 W (AC only)
Power Output:	1.2 W...RMS (Max.) 1.5 W...MPO
Speaker:	Woofer; 12 cm (5") PM Dynamic Speaker (3Ω) Tweeter; 1.5 cm (19/32") Ceramic Speaker (700Ω)
Output:	EXT SP; 3~8Ω (∅3.5)
Dimensions:	287 mm(W)×163 mm(H)×58 mm(D) (11 5/16×6 13/32×2 9/32)"
Weight:	1.2 kg (2 lb. 10 oz.) without batteries
Radio Frequency Range:	FM; 87.5~108 MHz LW; 150~285 kHz (2000~1060 m) MW; 520~1610 MHz (577~186 m) SW1; 5.9~18 MHz (50.8~16.7 m) SW2; 5.9~6.2 MHz (50.8~48.4 m)
Intermediate Frequency:	FM; 10.7 MHz [Z][F][I][G] AM (LW/MW/SW1/SW2); 455 kHz [E] AM (LW/MW/SW1/SW2); 470 kHz
Sensitivity:	FM; 4 μV/50 mW output (−3 dB Limit sens) LW; 56.3 μV/m/50 mW output MW; 56.3 μV/m/50 mW output SW1; 11.2 μV/50 mW output SW2; 5.6 μV/50 mW output

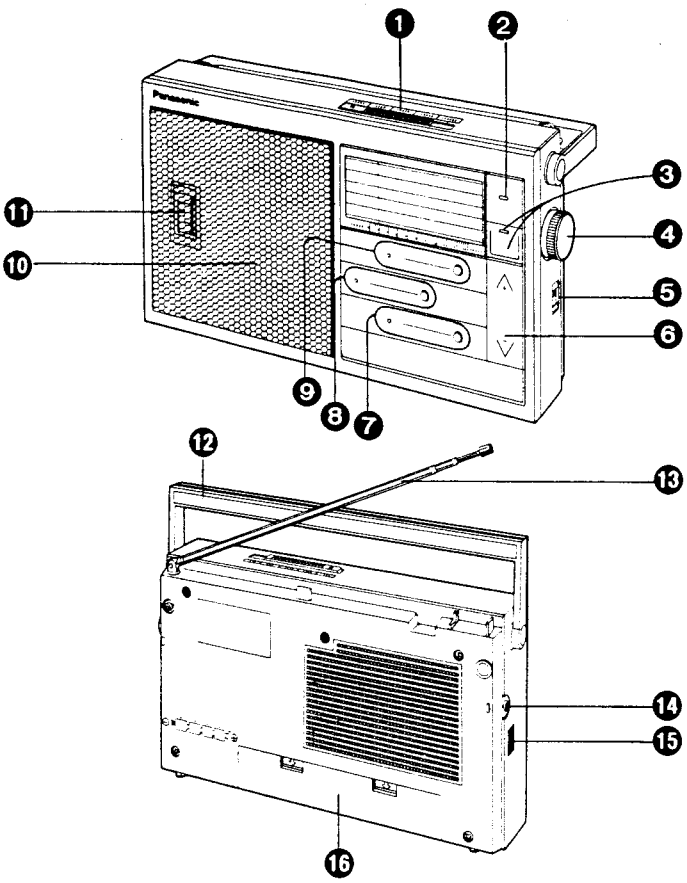
Design and specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

773

LOCATION OF CONTROLS AND COMPONENTS



❶ Band Selector (BAND SELECTOR) [FM, LW, MW, SW1, SW2]
❷ Tuning Indicator (TUNING)
❸ Radio Switch/Indicator (RADIO) [ON, OFF]
❹ Tuning Control (TUNING)
❺ Operation Switch (OPERATION) [ON, OFF]
❻ Volume Control Key (VOLUME)
❼ Tone Select Button (TONE) [HIGH, LOW]
❽ Loudness Button (LOUDNESS) [ON, OFF]
❾ FM Mute Button (FM MUTE) [ON, OFF]
❿ Built-in Speaker (Woofer) [12 cm (5") 3Ω]
⓫ Built-in Speaker (Tweeter) [1.5 cm (19/32") 700Ω]
⓬ Handle
⓭ Telescopic Antenna
⓮ Earphone/External Speaker Jack (IMP. 3–8Ω C ⊲)
⓯ AC Socket (AC IN ~)
⓰ Battery Compartment

DISASSEMBLY INSTRUCTIONS

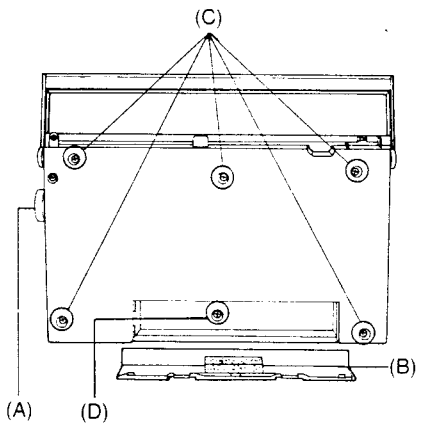


Fig. 1

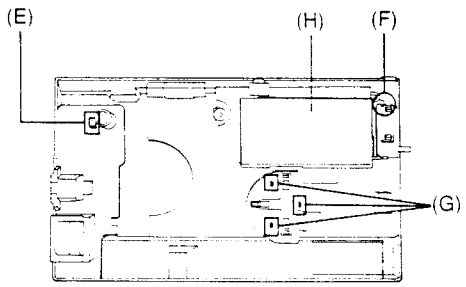


Fig. 2

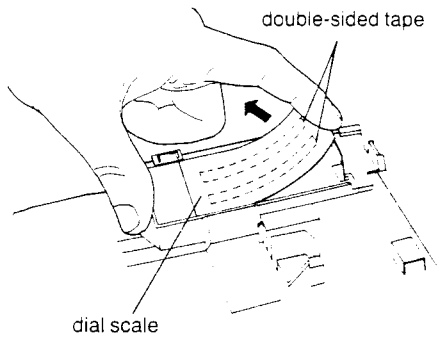


Fig. 3

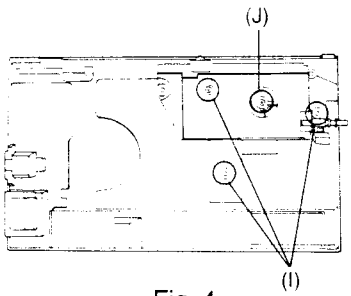


Fig. 4

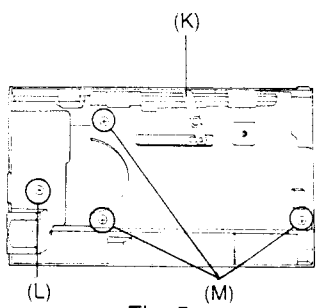


Fig. 5

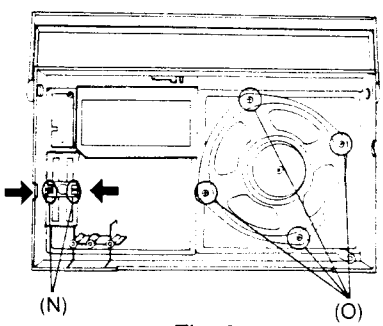


Fig. 6

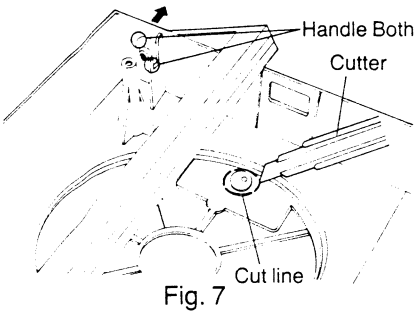


Fig. 7

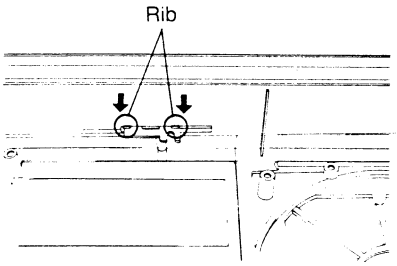


Fig. 8

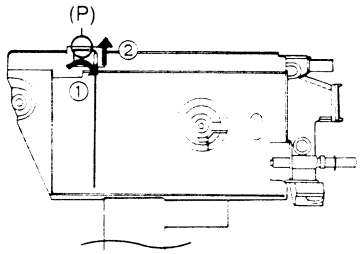


Fig. 9

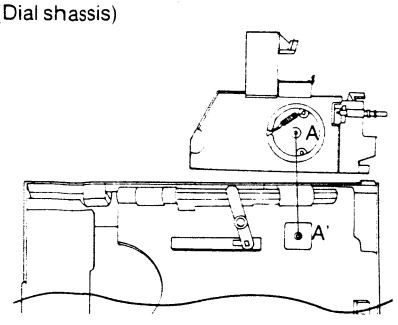
Ref. No.	Shown in Fig.—.	To remove—.	Remove—.
1	1	Front Cabinet	Knob ..... (A)×1
2	1		Battery cover ..... (B)×1
3	1		Screw (3×40 mm) ..... (C)×5
4	1		Screw (3×12 mm) ..... (D)×1
5	2		Socket ..... (E)×1
6	2	LED Circuit Board (Tuning, Radio)	Rib ..... (F)×1
7	2	LED Circuit Board (FM Mute. Loudness. Tone)	Rib ..... (G)×3
8	2	Dial Shassis (※1)	Turn the tuning shaft until the pointer reaches the left end.
9	2, 3		Remove the dial scale in the direction of the arrow ... (H)×1
10	4		Screw (3×30 mm) ..... (I)×3
11	4		Screw (2.6×6 mm) ..... (J)×1
12	5	Band Switch Lever (※2)	Lever ..... (K)×1
13	5	Power Circuit Board	Screw (3×10 mm) ..... (L)×1
14	5	Main Circuit Board	Screw (3×10 mm) ..... (M)×3
15	6	Volume Knob	Remove the rib in the direction of arrow ..... (N)×2
16	6	Speaker (Woofer)	Screw (3×8 mm) ..... (O)×4
17	7	Speaker (Tweeter)	Cut the rib by used cutter.
18	7	Handle	Remove the handle both in the direction of arrow.
19	8	Band Knob	Remove the rib in the direction of arrow.
20	9	Pointer	Remove the rib in the direction of arrow ①, ② .... (P)×1

※1. If the double-sided tape on the back of the Dial Scale its not adhesive qualities, replace it.

※2. Note that they may be tightly engaged.

■ HOW TO REPLACE

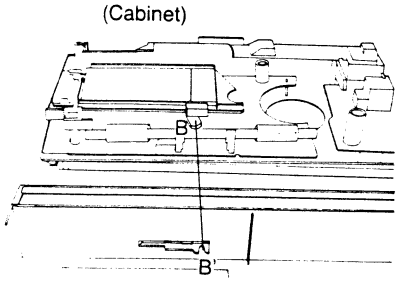
(Dial shassis)



During installation, simultaneously fit in A and A'.

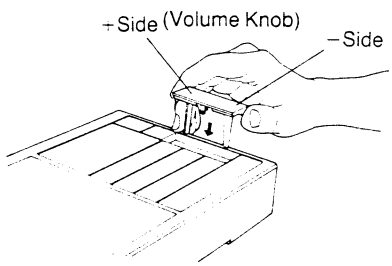
Fig. 10

(Cabinet)



During installation, simultaneously fit in B and B'.

Fig. 11



Insert the Volume knob in the direction of the arrow.

Fig. 12

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
1. Set volume control to maximum. 2. Set FM Mute switch to OFF. 3. Set Loudness switch to OFF. 4. Set tone switch to OFF. 5. Set band switch to LW, MW, SW1, SW2 or FM.	6. Set Operation switch to ON. 7. Set power source voltage to 6 V DC. 8. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	AM-IF ALIGNMENT						
(1)	AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	Ⓩ Ⓕ ① Ⓖ 455 kHz Ⓔ 470 kHz 30% Mod. at 400 Hz	Point of non-interference. (on/about 600 kHz)	Output meter across voice coil.	T2 (AM 1st IFT) T3 (AM 2nd IFT) T5 (AM 3rd IFT)	Adjust for maximum output.
	LW-RF ALIGNMENT						
(2)	LW	〃	135 kHz	Tuning capacitor fully closed.	〃	L4 (LW OSC Coil)	〃
(3)	LW	〃	297 kHz	Tuning capacitor fully open.	〃	CT6 (LW OSC Trimmer)	〃
(4)	LW	〃	150 kHz	Tune to signal.	〃	(•1) L1 (LW ANT Coil)	Adjust for maximum output. Adjust L1 by moving coil bobbin along ferrite core.
(5)	LW	〃	285 kHz	〃	〃	CT1 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	MW-RF ALIGNMENT						
(6)	MW	〃	511 kHz	Tuning capacitor fully closed.	〃	L5 (MW OSC Coil)	Adjust for maximum output.
(7)	MW	〃	1,650 kHz	Tuning capacitor fully open.	〃	CT7 (MW OSC Trimmer)	〃
(8)	MW	〃	550 kHz	Tune to signal.	〃	(•1) L2 (MW ANT Coil)	Adjust for maximum output. Adjust L2 by moving coil bobbin along ferrite core.
(9)	MW	〃	1,500 kHz	〃	〃	CT2 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).
	(•1) Cement antenna bobbin with wax after completing alignment.						
	SW1-RF ALIGNMENT						
(10)	SW1	Connect to test point ▼ through ceramic capacitor (10 pF) Negative side to test point ▼.	5.75 MHz	Tuning capacitor fully closed.	〃	L6 (SW OSC Coil)	Adjust for maximum output.
(11)	SW1		18.8 MHz	Tuning capacitor fully open.	〃	CT8 (SW OSC Trimmer)	〃
(12)	SW1		5.90 MHz	Tune to signal.	〃	L3 (SW ANT Coil)	Adjust for maximum output. Repeat steps (10)~(12).
	SW2-RF ALIGNMENT						
(13)	SW2	Connect to test point ▼ through ceramic capacitor (10 pF) Negative side to test point ▼.	5.85 MHz	Tuning capacitor fully closed.	〃	L11 (SW2 OSC Coil)	Adjust for maximum output.
(14)	SW2		6.25 MHz	Tuning capacitor fully open.	〃	CT9 (SW2 OSC Trimmer)	〃
(15)	SW2		6.05 MHz	Tune to signal.	〃	L10 (SW2 ANT Coil)	Adjust for maximum output. Repeat steps (13)~(15).

Be sure to fold at the (▼) mark so that mark is on the outside.

■ FM ALIGNMENT (Z, E, F, I only)

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		FM-IF ALIGNMENT					
(1)	FM	High side thru. 0.001 µF to test point ▼3, Negative side to test point ▼2.	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ▼3. Negative side to test point ▼2.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2).
(2)	FM	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3).
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L9 (FM OSC Coil)	(•2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	〃	CT10 (FM OSC Trimmer)	〃
(5)	FM		90 MHz	Tune to signal.	〃	L7 (FM ANT Coil)	〃
(6)	FM		106 MHz	Tune to signal.	〃	CT4 (FM ANT Trimmer)	(•2) Adjust for maximum output. Repeat steps (3)~(6).
	(•2) Three output responses will be present: proper tuning is the center frequency.						

■ ALIGNMENT POINTS

(Please refer to Circuit Board and Wiring Connection Diagram which is located test points)

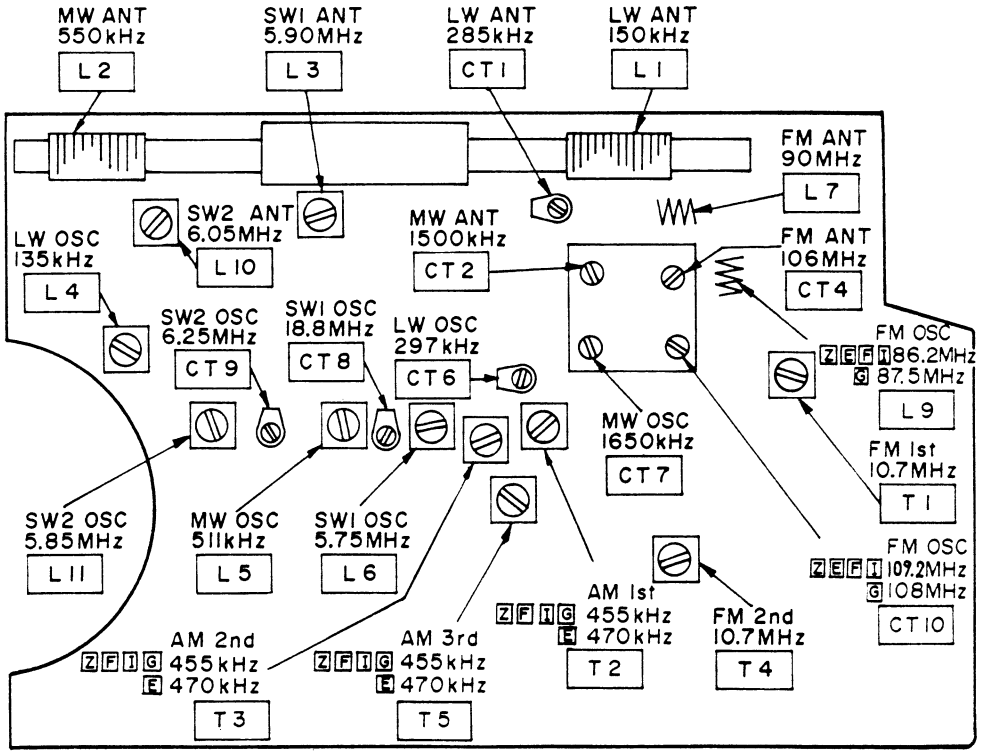


Fig. 1

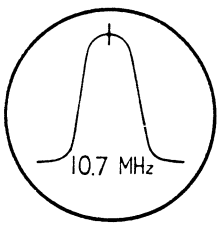


Fig. 2

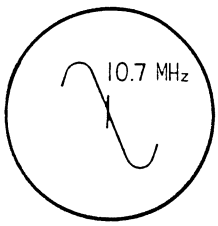


Fig. 3

■ DIAL POINTS (0 Point adjustment)

1. Turn the Variable Capacitor to fully counter-clockwise.
2. Position the pointer over the slot.

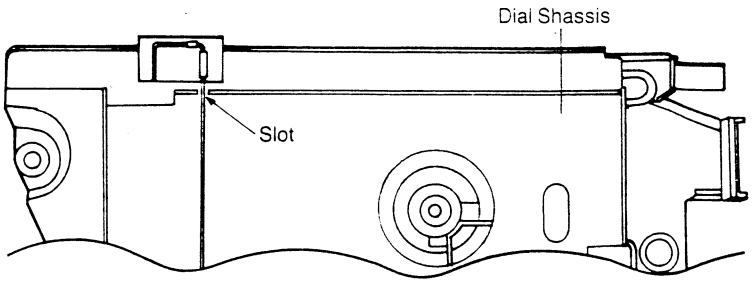


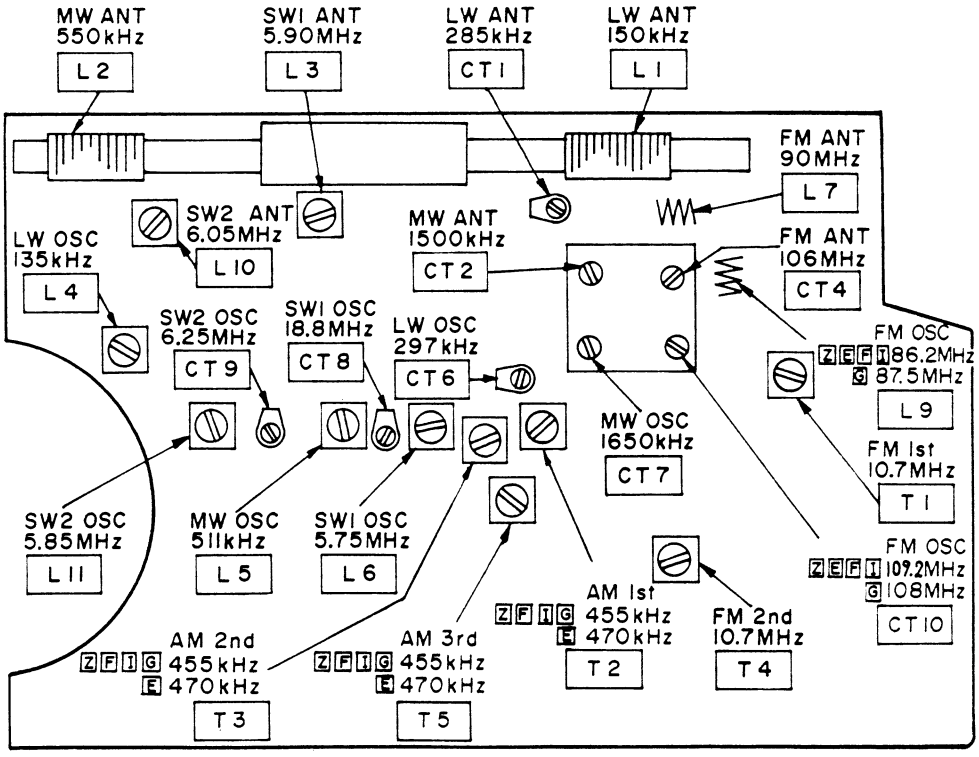
Fig. 4

■ FM ALIGNMENT (Z, E, F, I only)

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		FM-IF ALIGNMENT					
(1)	FM	High side thru. 0.001 µF to test point ▼3, Negative side to test point ▼2.	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ▼3. Negative side to test point ▼5.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2).
(2)	FM	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3).
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L9 (FM OSC Coil)	(•2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	〃	CT10 (FM OSC Trimmer)	〃
(5)	FM		90 MHz	Tune to signal.	〃	L7 (FM ANT Coil)	〃
(6)	FM		106 MHz	Tune to signal.	〃	CT4 (FM ANT Trimmer)	(•2) Adjust for maximum output. Repeat steps (3)~(6).
	(•2) Three output responses will be present: proper tuning is the center frequency.						

■ ALIGNMENT POINTS

(Please refer to Circuit Board and Wiring Connection Diagram which is located test points)



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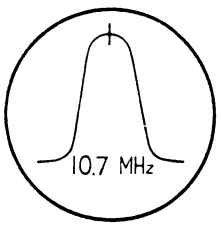
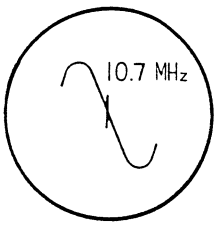


Fig. 2



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2. Position the pointer over the slot.

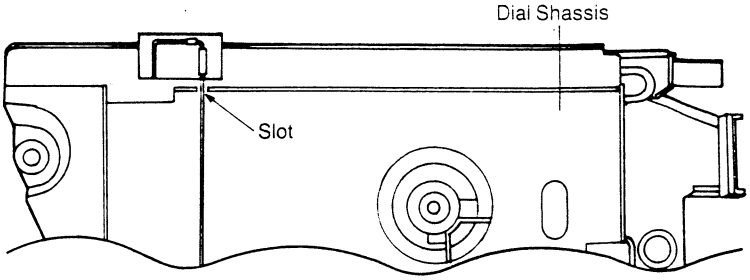


Fig. 4

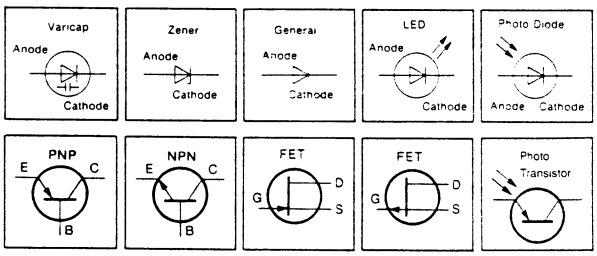
Ref No.	Zone	Part No.	Function Name
IC1	A•3	RVITA7358P	FM FRONT END
IC2	C•7	AN7226	FM/AM IF AMP. DET. AM OSC. MIX
IC3	C•10	RVILC7533	VOLUME AMP
IC4	F•5	RVIUPC1212C	POWER AMP
IC5	F•8	RVITC9130P	TOUCH SWITCH AMP
Q1	C•4	2SK104F	AM RF AMP
Q3	D•8	2SC945P1TA	SWITCHING
Q4	B•9	2SA564QTA	SWITCHING
Q5	E•11	2SC945Q1TA	SWITCHING
Q6	D•12	2SC945Q1TA	SWITCHING
Q7	D•12	2SC945P1TA	SWITCHING
Q8	E•11	2SB564K	SWITCHING
Q9	D•9	2SC2001K1TA	MUTING
Q10	D•9	2SC2001K1TA	SWITCHING
Q11	F•10	2SA564QTA	SWITCHING
Q12	F•11	2SC945P1TA	SWITCHING
Q13	E•6	2SC945Q1TA	SWITCHING
Q14	F•7	2SC945Q1TA	SWITCHING
D1	D•4	RVDIN4148TA	PROTECTER
D2	B•4	RVDIS2473FV	D. AGC
D3	B•5	RVDSD113TA	AFC
D4	G•7	LN222RP	FM MUTE IND
D5	G•7	LN222RP	LOUDNESS IND

Ref No.	Zone	Part No.	Function Name
D6	G•7	LN222RP	TONE (HIGH) IND
D7	C•9	RVDRD6R8EBT	PROTECTER
D8	C•9	LN224RP	TUNING IND
D9	B•9	RVDIN4148TA	PROTECTER
D10	B•10	RVDIN4148TA	PROTECTER
D14	G•7	LN224RP	RADIO ON IND
D15	F•10	RVDIN4148TA	PROTECTER
D16	E•8	RVDIN4148TA	PROTECTER
D17	B•12	RVDRD3R9EBT	PROTECTER
D201	F•12	RVDISR35TA	RECT
D202	F•12	RVDISR35TA	RECT
D203	F•12	RVDISR35TA	RECT
D204	F•12	RVDISR35TA	RECT

Notes:

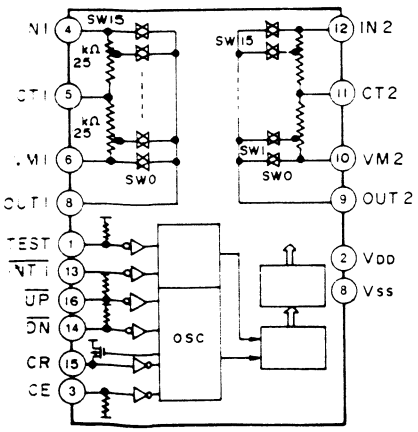
1. S1-1~S1-8: Band switch in "FM" position. (1...FM, 2...LW, 3...MW, 4...SW1, 5...SW2)
2. S2: OPERATION ON/OFF switch in "ON" position.
3. S3, 4: Volume switch.
4. S5: FM MUTE ON/OFF switch in "OFF" position.
5. S6: LOUDNESS ON/OFF switch in "OFF" position.
6. S7: TONE HIGH/LOW switch in "LOW" position.
7. S8: POWER ON/OFF switch in "OFF" position.
8. S9: AC/DC IN select switch in "DC IN" position.
9. The mark (▼) shows test point e.g. ▼1 =test point 1.
10. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
    < >...FM position, ( )...AM position
    [ ]...LOUDNESS OFF position.
    (( ))...TONE OFF position.
    [[ ]]...FM MUTE OFF position.
11. Battery current: No signal ..... 45 mA
    Maximum output (radio) ..... 220 mA
12. Important safety notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.

+B Voltage Line
Radio (FM) Signal Line

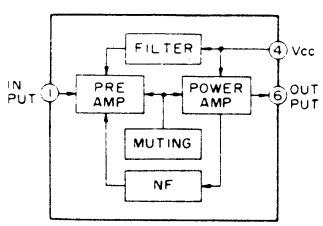


■ IC BLOCK DIAGRAM

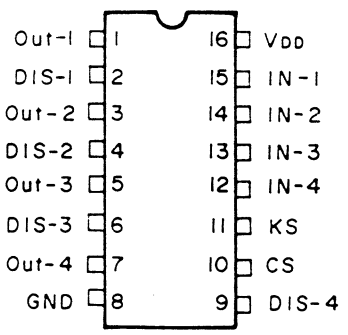
IC3 RVILC7533



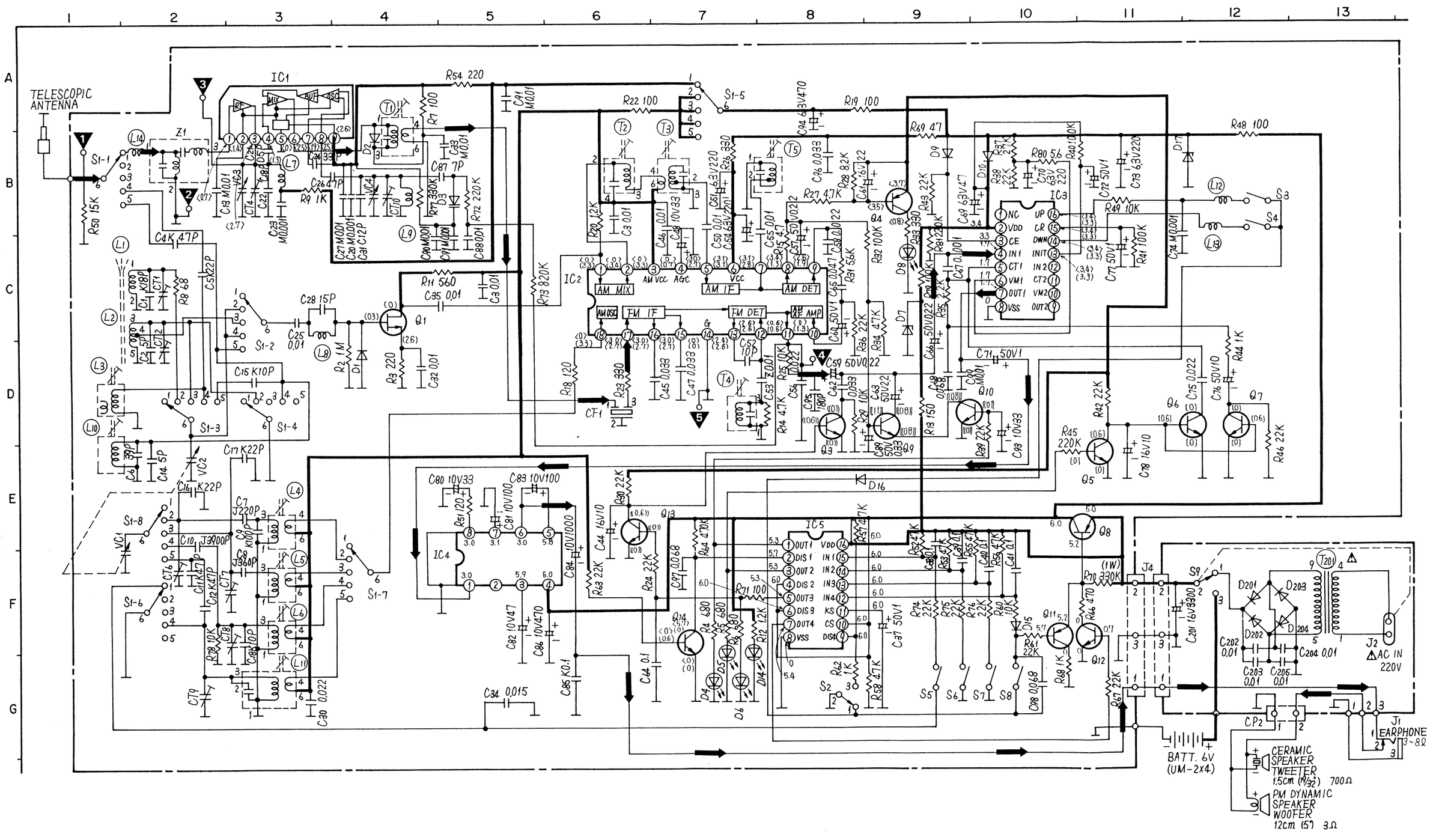
IC4 RVIUPC1212C



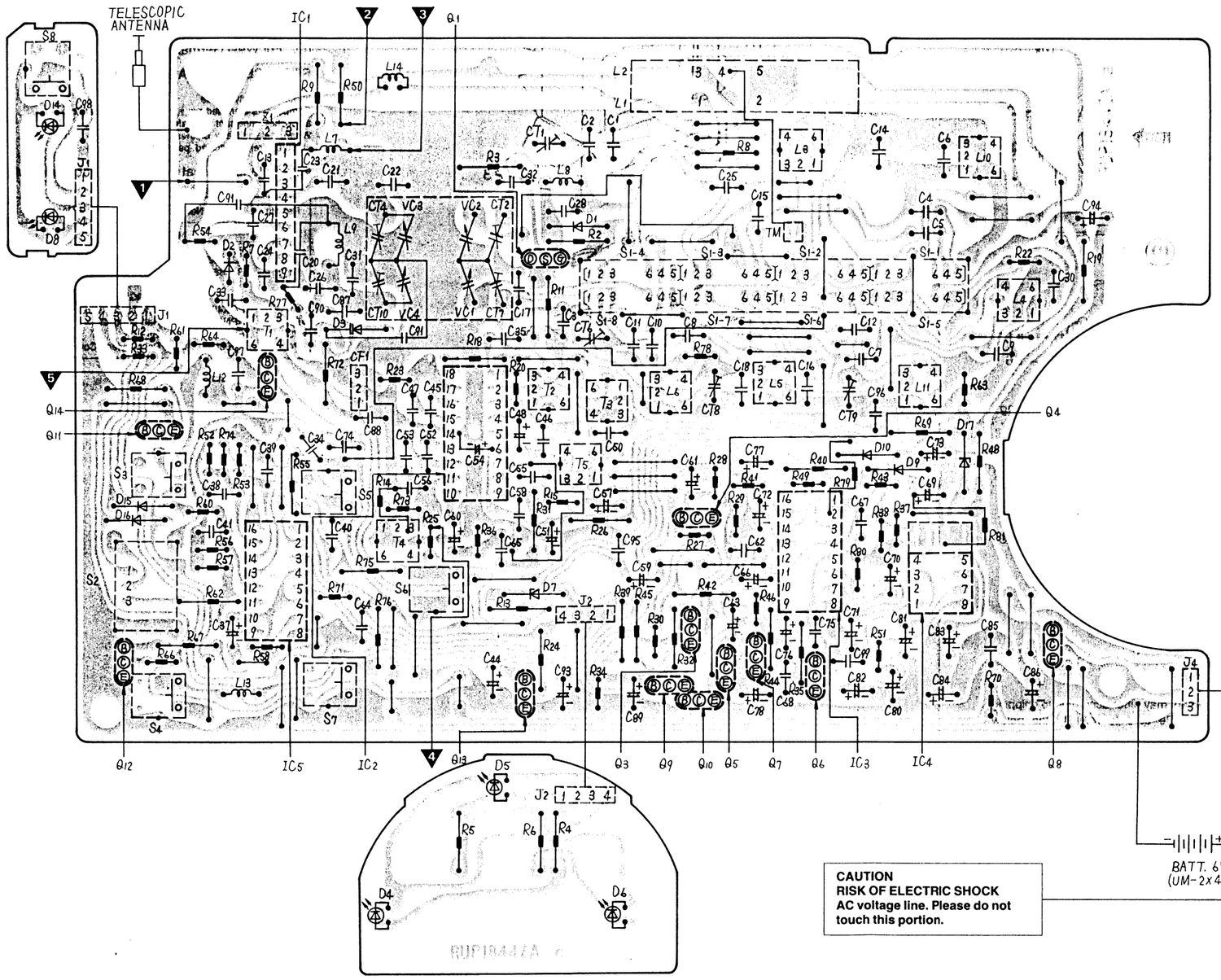
IC5 RVITC9130P

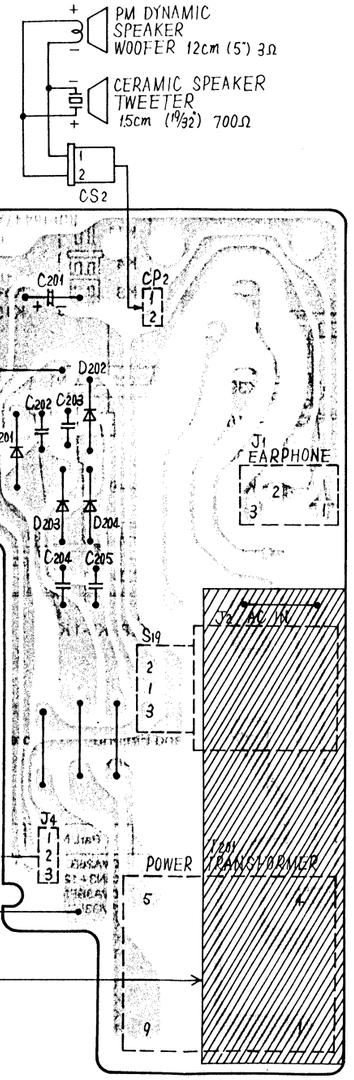


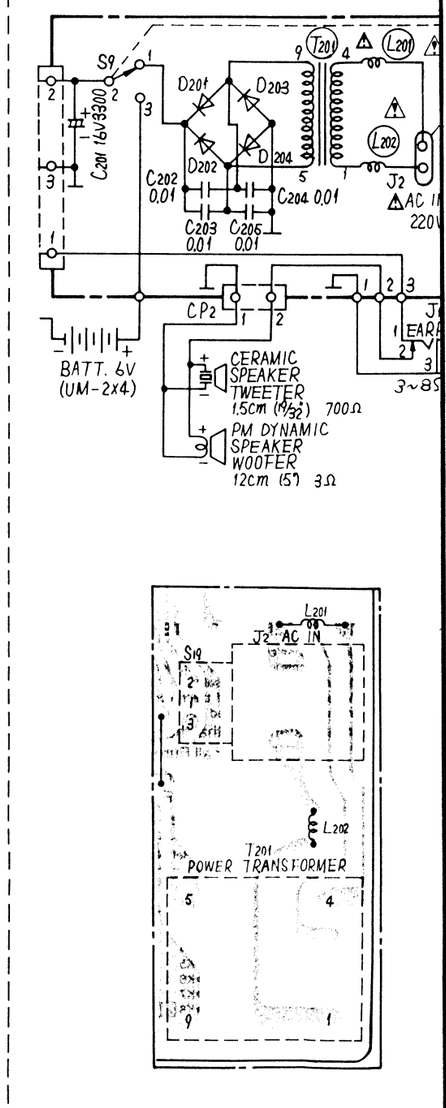
SCHEMATIC DIAGRAM MODEL RF-1680L



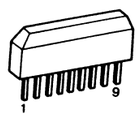
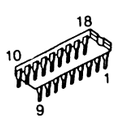
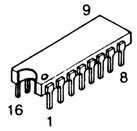
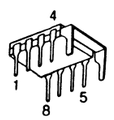
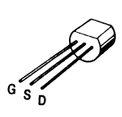
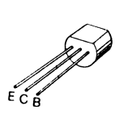
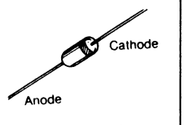
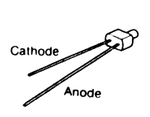
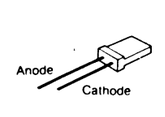
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM MODEL RF-1680L



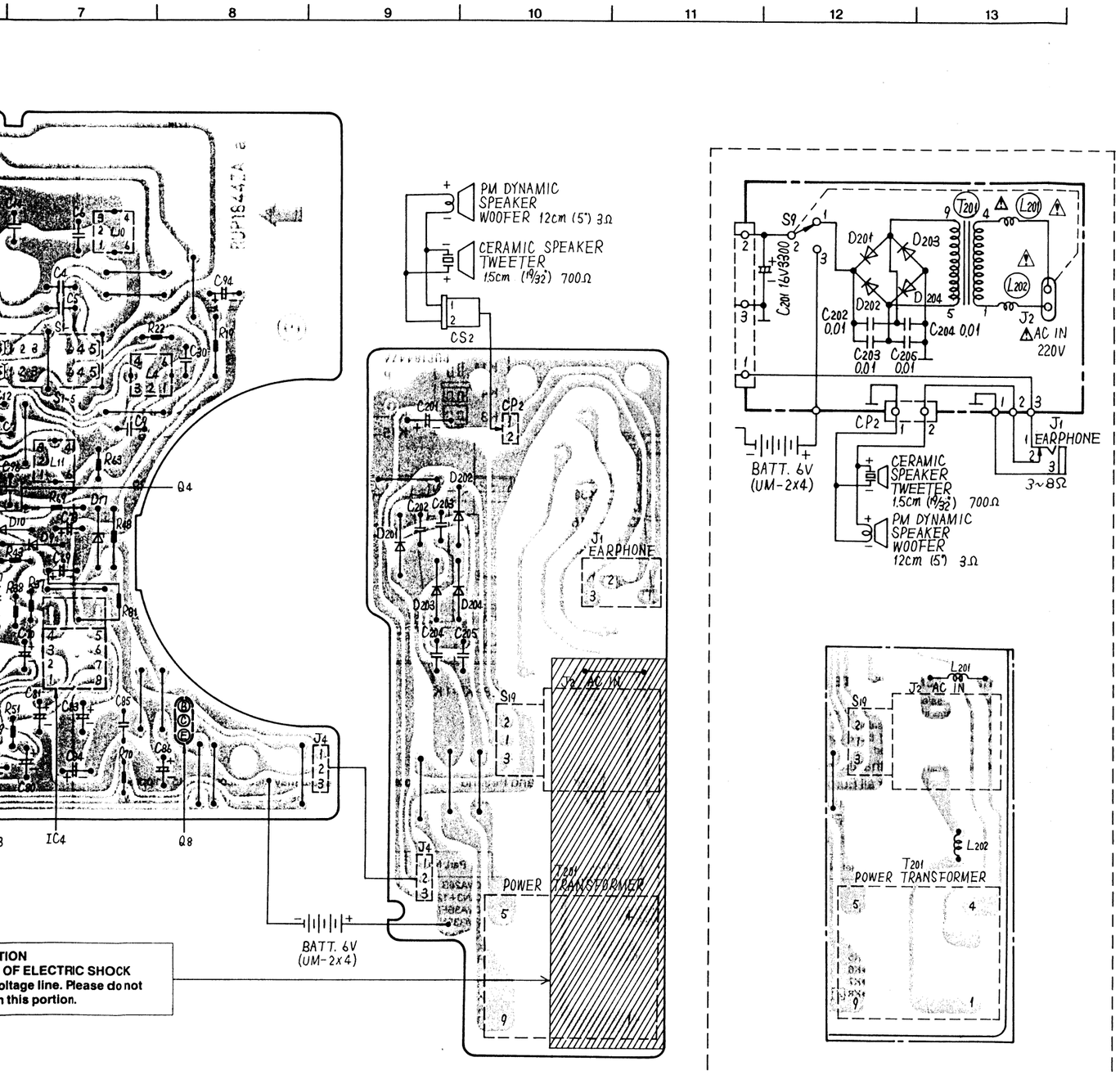


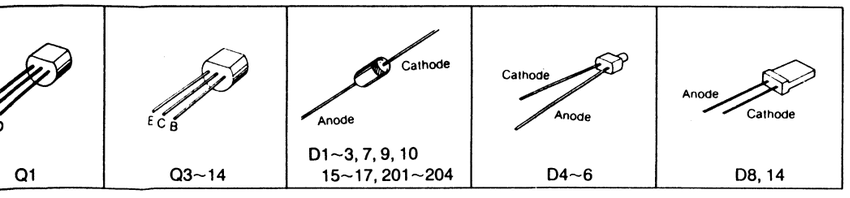


G...For West Germany Only

IC1	IC2	IC3	IC4	IC5	Q1	Q3~14	D1~3, 7, 9, 10 15~17, 201~204	D4~6	D8, 14
									

CONNECTION DIAGRAM MODEL RF-1680L





ELECTRICAL PARTS LIST

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)
ERX	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage	Tolerance
ERD: Carbon	10 : 1/8 W	J : ±5%
ERD: Metal Film	12 : 1/2 W	
ERX: Metal Film	25 : 1/4 W	
ERQ: Fust Type Metal	1 : 1 W	
RRD: Carbon (Chip Type)	18 : 1/8 W	

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity
ECEA	50	M	R47	
Type	Voltage	Peculiarity	Value (0.47 μF)	

Capacictor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA: Electrolytic	0J : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polypyester	1E : 25 V		Z : +80%, −20%
ECQP: Polypropylene	1H : 50 V		P : +100%, −0%
ECET: Electrolytic	1V : 35 V		
ECEA□□□N: Non Polar Electrolytic	50 : 50 V		
QCU □: Ceramic (Chip Type)	25 : 25 V		
ECUX: Ceramic (Chip Type)	16 : 16 V		

REPLACEMENT PARTS LIST

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- Z...For all European areas except United Kingdom, West Germany, France, Italy and Finland.
- E...For United Kingdom
- I...For Italy and Finland
- G...For West Germany
- F...For France

Ref. No.	Part. No.	Ref. No.	Part. No.
CAPACITORS		C92	ECFD1C104MD
C1,22	ECCD1H180KC	C94	ECEA0JU471
C2,14,21	ECCD1H050CC	C95	ECCD1H181K
3,25,32,35,41, 50,53,55,202,203, 204,205	ECKD1H103ZF	C98	ECFD1C683MD
		C201	ECEA1CU332
C4,11,12,26	ECCD1H470KC	**RESISTORS**	
C5,16,17	ECCD1H220KC	R2	ERD25TJ105
C6	ECCD1H390KC	R3	ERD25FJ221
C7	ECQP2A221JZ	R4,5,6	ERD25FJ681
C8	ECQP2A361JZ	R7,22,71	ERD25FJ101
C9	ECCD1H101KC	R8	ERD25FJ680
C10	ECQP2A392JZ	R9,44,62,68	ERD25FJ102
		R11	ERD25FJ561
C13,19,27,33, 88,90,99	ECKD1H103MD	R12,20	ERD25FJ122
C15,18,52	ECCD1H100KC	R13	ERD25FJ151
C20,23,67,74, 91	ECKD1H102MD	R14	ERD25FJ472
C24	ECCD1H330KC	R15	ERD25FJ4R7
C28	ECCD1H150KC	R18	ERD25FJ121
C30,56	ECKD1H223ZF	R19,48	ERD25FJ101
C31	ECCD1H120KC	R23,33	ERD25FJ331
C34	ECFT1E153MD	R24,39,42,67, 75,76	ERD25TJ223
C37	ECEA1HU0R1	R25,29,49,60,78	ERD25FJ103
C38,39,40,64	ECFT1C104MD	R26	ERD25FJ331
		R27	ERD25FJ472
C44,76,78	ECEA1CU100	R28	ERD25FJ822
C45,47,62,96	ECFT1E333MD	R30,36,38,43, 46,61,63,74	ERD25TJ223
C46	ECFT1E103MD		
C48,80,93	ECEA1AU330	R31	ERD25FJ562
C51,70,73	ECEA0JU221	R32,40,72,79	ERD25TJ104
C57,59,66	ECEA1HUR22	R34,52,53,56, 57,58	ERD25TJ473
C58	ECFT1E223MD	R35	ERD25FJ222
C60,71,72,77	ECEA1HU010	R37	ERD25TJ273
C61	ECEA1CU220	R41	ERD25TJ104
C63	ECEA1HV2R2	R45,81	ERD25TJ224
C65	ECFT1E473MD	R50	ERD25FJ153
C68,97	ECFT1C683MD	R51	ERD25FJ121
C69	ECEA0JU470	R54	ERD25FJ221
C75	ECFT1E223MD		
C81,83	ECEA1AU101	R55	ERD25TJ473
C82	ECEA1AU470	R64	ERD25TJ474
C84	ECEA1AU102	R66	ERD25FJ471
C85	ECQG1H104KZ	R69	ERD25FJ470
C86	ECEA1AU471	R70	ERD25TJ334
C87	ECCD1H070DC	R73	ERD25TJ824
		R77	ERD25TJ334
C89	ECEA1HUR33	R80	ERD25FJ5R6

Ref. No.	Part. No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1	RVITA7358P	IC
IC2	AN7226	IC
IC3	RVILC7533	IC
IC4	RVIUPC1212C	IC
●IC5	RVITC9130P	IC
TRANSISTORS		
Q1	2SK104	Transistor (Ge)
Q3,5,6,7,12,13,14	2SC945-Q	Transistor (Si)

Ref. No.	Part. No.	Part Name & Description
Q4,11	2SA722-S	Transistor (Ge)
Q8	2SA952L1	Transistor (Ge)
Q9,10	2SC2001K1	Transistor (Si)
DIODES & RECTIFIERS		
●D1,9,10,15,16	RVD1N4148	Diode (Si)
D2	MA161	Diode (Si)
D3	RVDSD113	Diode (Si)
D4,5,6	LN222RP	LED (FM Mute, Loudness, Tone IND)
D7	RVDRD6R8EB	Diode (Si)
D8,14	LN224RP	LED (Tuning, Radio ON IND)
D17	RVDRD3R9EB	Diode (Si)
D201,202,203,204	RVD1SR35	Diode (Si)
COILS		
●L1,2	RLF6F26	Antenna Coil, LW/MW
L3	RLA3B41	Antenna Coil, SW1
L4	RL01B12	Oscillator Coil, LW
L5	RL02B108	Oscillator Coil, MW
L6	RL03B87	Oscillator Coil, SW1
L7	RL04N104	Antenna Coil, FM
L9 Z E F I	RLD4Y53	Oscillator Coil, FM
L9 G	RL04N173	Oscillator Coil, FM
L10	RLA3B49	Antenna Coil, SW2
●L11	RL03B94	Oscillator Coil, SW2
L201 G	RLQZA470K	Choke ⚠
L202 G	RLQZB470K	Choke ⚠
TRANSFORMERS		
T1	RLI4B153	IFT, FM 1st
T2,5	RLI2B207	IFT, AM 1st, 3rd
T3	RLI2B217	IFT, AM 2nd
●T4	RLI4B157	IFT, FM 2nd
●T201 Z F I G	RLT5I2G3A	Power Transformer ⚠
●T201 E	RLT5I2E1A	Power Transformer ⚠
VARIABLE CAPACITORS		
VC1,2,3,4	RCV4RC2RA	Variable Capacitor/with Trimmer Capacitor (CT1, 2, 3, 4)
TRIMMER CONDENSER		
CT1,6	RCVTZ30F	Trimmer Capacitor
CT8,9	RCVTZ11F	Trimmer Capacitor
CERAMIC FILTERS		
CF1	RVFSFE107MSZ	Ceramic Filter
FILTERS		
Z1	RXABPWB5W	Component Combinations
SWITCHES		
●S1	RSS5H01Y	Band
S2	QSS1206	Operation
●S3,4,5,6,7,8	RSH1A40Z	Volume, FM Mute, Loudness, Tone, Radio ON/OFF
JACKS		
J1 (S9) Z F I G	RJJ1A4Z	AC/DC IN ⚠
J1 (S9) E	RJJ1A5Z	AC/DC IN ⚠
J2	RJJ1D20Y	Earphone

■ FM ALIGNMENT (G only)

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	FM-IF ALIGNMENT						
(1)	FM	High side thru. 0.001 µF to test point ▼3. Negative side to test point ▼2.	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ▼4. Negative side to test point ▼5.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2).
(2)	FM	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3).
	FM-RF ALIGNMENT						
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	87.5 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L9 (FM OSC Coil)	(・2) Adjust for maximum output.
(4)	FM		108 MHz	Variable capacitor fully open.	〃	CT10 (FM OSC Trimmer)	〃
(5)	FM		90 MHz	Tune to signal.	〃	L7 (FM ANT Coil)	〃
(6)	FM		106 MHz	Tune to signal.	〃	CT4 (FM ANT Trimmer)	(・2) Adjust for maximum output. Repeat steps (3)~(6).
	(・2) Three output responses will be present; proper tuning is the center frequency.						

DIAL THREADING

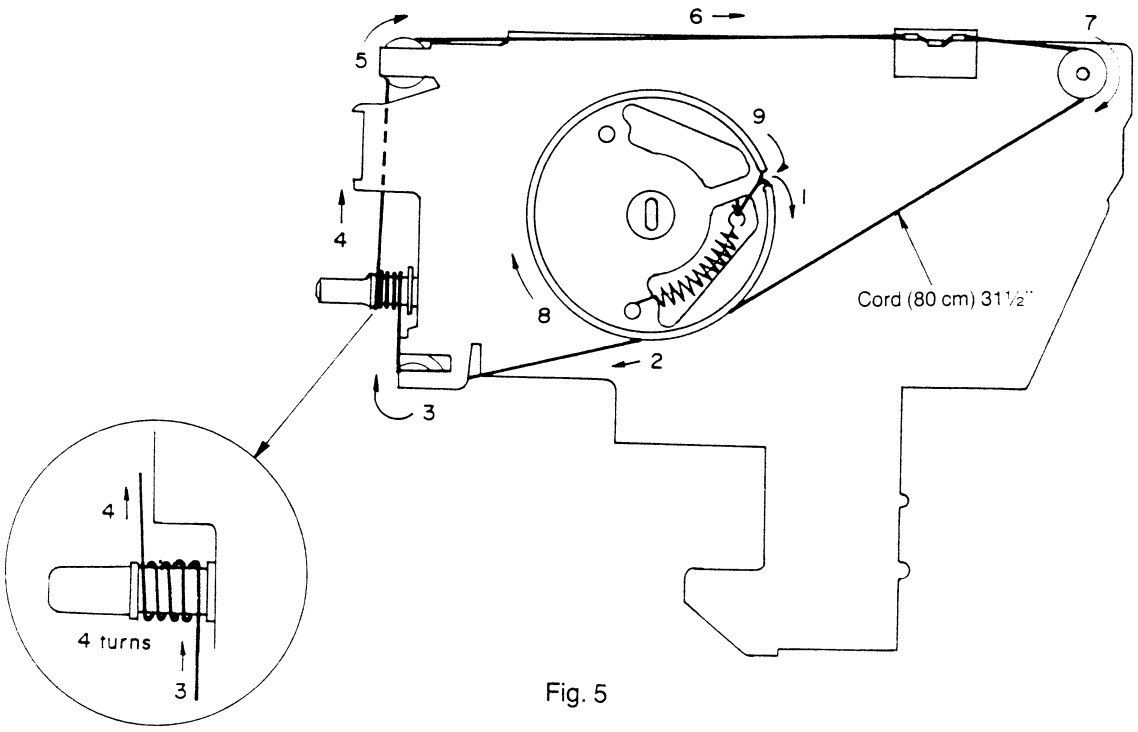


Fig. 5

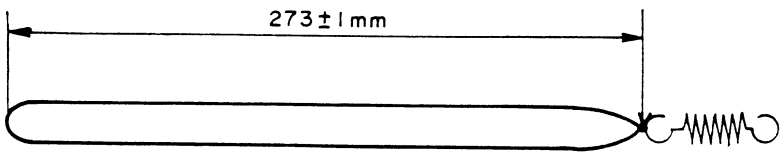
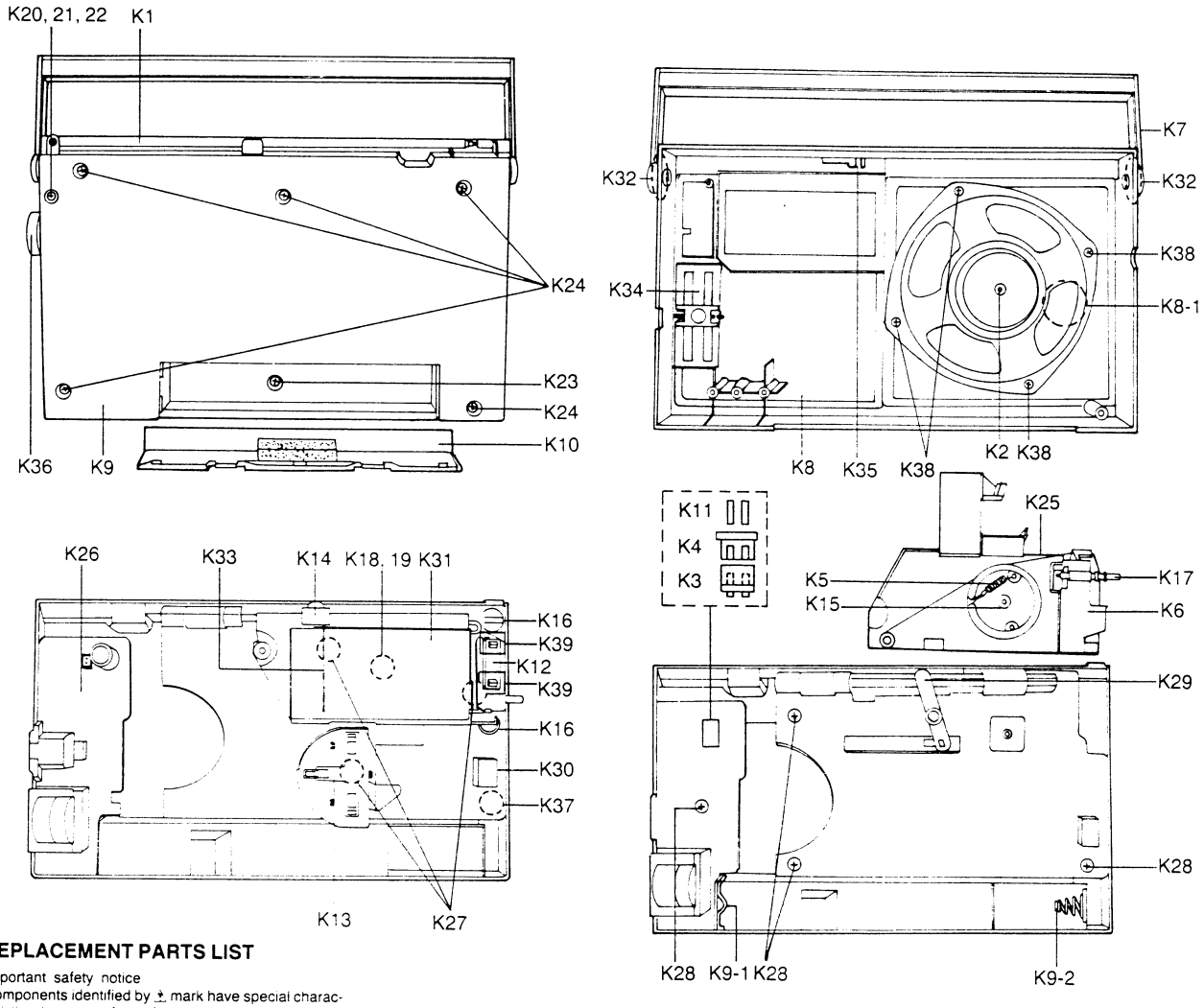


Fig. 6

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

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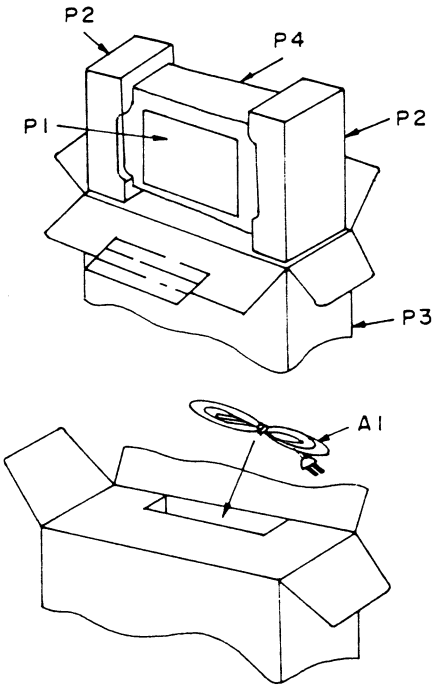
E...For United Kingdom
I...For Italy and Finland
G...For West Germany
F...For France

Notes: Part numbers may differ according to shipping destination. Be sure to refer to the below destination codes before ordering replacement parts.

Ref. No.	Part. No.	Part Name & Description
		CABINET PARTS
K1	XEARR228FAY	Telescopic Antenna
•K2	RAS12P12Y	Speaker (Woofer)
K3	RJP2G4Y	Plug (2P)
K4	RJS2L3Z	Socket (2P)
K5	RDS4060A	Spring, Dial Drum
•K6	RYZF1680LZKS	Dial Chassis Ass'y
•K7	RYHF1680LZKS	Handle Ass'y
•K8 [Z][F][I][G]		
	RYMF1680LZK8	Front Cabinet Ass'y
•K8 [E]	RYMF1680LZE8	Front Cabinet Ass'y ⚠
K8-1	RAF8SB1510DM	Speaker (Tweeter)
•K9 [Z][F][I]		
	RYFF1680LZKS	Rear Cabinet Ass'y
•K9 [E]	RYFF1680LZEK	Rear Cabinet Ass'y ⚠
•K9 [G]	RYFF1680LZGK	Rear Cabinet Ass'y
•K9-1	RJC214Z	Terminal, Battery (+)
•K9-2	RJC617Z	Terminal, Battery (−)
•K10	RYNF1680LZKS	Battery Cover Ass'y
K11	RJT707Z	Termina, Socket
•K12	RMP229Z	Holder, LED (D8, 14)
•K13	RMP230Z	Holde, LED (D4,5,6)
•K14	RDA103Z	Bracket, Dial Pointer
•K15	RDD414Z	Drum, Dial
•K16	RDR54Z	Roller, Dial
K17	RDT9133Z	Shaft, Tuning
K18	XSN26+6	Screw, Dial Drum M'tg
K19	XWA26B	Washer, Dial Drum M'tg
K20	XSN3+12BNS	Screw, Telescopic Antenna M'tg
K21	XWA3BFN	Washer, Telescopic Antenna M'tg
K22	XWG3FN	Washer, Telescopic Antenna M'tg
K23	XTB3+12BFN	Screw, Cabinet M'tg
K24	XTB3+40CFZ	Screw, Cabinet M'tg
K25	RDZ05A1	Cord, Dial
•K26	RUP1844Z	Print Circuit Board
K27	XTN3+30B	Screw, Dial Chassis M'tg
K28	XTV3+10G	Screw, Circuit Board M'tg
•K29	RHR1247Z	Lever, Band
•K30	RHS720Z	Cover, Switch
•K31 [Z][F][I]		
	RKD668Z	Scale, Dial
•K31 [E]	RKD668Y	Scale, Dial
•K31 [G]	RKD668X	Scale, Dial
K32	RKX165Z	Spacer, Handle
•K33	RDP268Z	Pointer, Dial
•K34	RBC640Z	Knob, Volume
•K35	RBD281Z	Knob, Band
•K36	RBN704Z	Knob, Tuning
K37	RUD16Z	Spring, Boss
K38	XTV3+8G	Screw, Speaker M'tg
•K39	RHR3035Z	Sheet, LED

ACCESSARY AND PACKING MATERIALS



[Z]...For all European areas except United Kingdom, West Germany, France, Italy and Finland
[E]...For United Kingdom
[F]...For France
[I]...For Italy and Finland
[G]...For West Germany

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Ref. No.	Part. No.	Part Name & Description
	ACCESSORIES	
A1 [Z][I][F][G]	RJA20Z	Power Cord, AC ⚠
A1 [E]	RJA86Z	Power Cord, AC ⚠
	PACKINGS	
●P1	PQX4518Z	Operating Instruction Book
●P2	RPN9482Z	Pad Complete
●P3	RPK1927Z	Gift Box
P4	XZB36X30A04	Polyethylene Cover

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